TReK 4.4.0 Release Notes

Known Issues with TReK 4.4.0

1. Print from the TReK Assistant (Help) does not work on Windows. This is a known issue with one of the third party software products used by TReK.
2. If the VPN connection to the POIC is lost, the TReK HPEG application will deactivate the connection. For Windows the lost connection is immediately recognized and the HPEG session is deactivated. On Linux the lost connection is only recognized after the TCP keepalive attempts have been exhausted. This can take up to two minutes. If during this timeframe the user attempts any network related activity (e.g., starting a session or disabling idle check), the keepalive counters reset and it will be another two minutes before the lost connection is detected.
3. The IONizer application may crash in some off-nominal scenarios. This problem has been observed when the IONizer application doesn't have the needed privileges on the directory containing the ION configuration files. It is suggested that the IONizer application use configuration files that are located on a local disk. Using a shared drive is possible, but may require additional configuration to allow IONizer to access the shared drive. This problem will be addressed in a subsequent release of TReK. If you encounter this problem and need help resolving, please contact the TReK help desk.
4. After logging into the HOSC provided VPN client on a 32-bit Red Hat Enterprise Linux 6.x computer, the Device Services API function PopulateIPAddressStructArray() could take up to 60 seconds to return. This function call is also used for the Browse for IP Address dialogs in various TReK applications. Similar behavior is seen for other network applications such as ssh. This behavior was not observed when the VPN client was disconnected. The PopulateIPAddressStructArray() function will now return an empty list and the Browse for IP Address Dialog will now be displayed without any IP addresses on Linux. They will still be populated in Windows. For this release users must type the appropriate IP address into the dialog on Linux.
5. A failover of the HOSC DTN server is not always detected by the IONizer application and requires the user perform a manual restart of the ION processes.
6. The IONizer application's proxy option currently has a problem supporting DTN services across an ISS AOS/LOS transition. Communication between the ION ground platform and the HOSC DTN2 server is broken and is not automatically reestablished. It is recommended that users do not use the proxy option when running ION. ION users who do not use the proxy option must be prepared to generate new ION configuration files for their ground platform when the ground platform's VPN office mode IP address changes.

Things to Know about TReK 4.4.0

1. The DTN capabilities that are part of this release require ION-3.3.1 or ION-3.3.1b which is available as a Windows installer or Linux RPM from the TReK download site. Newer versions of ION *may* work with TReK, but it is suggested that you maintain the ION version certified with your current TReK version. Running TReK in a Windows virtual machine with the incorrect version of ION is a known problem. Information on TReK releases and their compatible ION versions is maintained on the TReK website.
2. The ERIS simulator is provided to allow you to exercise the HPEG GUI prior to the POIC delivery of HPEG capabilities to remote users. The ERIS simulator does not support multiple connections or reconnecting from the HPEG GUI. You will need to restart the ERIS simulator if you deactivate HPEG.
3. Start scripts are provided on Linux to properly set up the environment before launching executables. If you are using the command line, it is suggested that you use the scripts as well.
4. The TReK CFDP Console application and ERIS Simulator must be started using a command line. These executables are located in the TReK Installation bin directory. Other applications can be started from the TReK menu.
5. A slash is required on the end of both the source and destination path for directory transfers in the CFDP GUI and CFDP Console.
6. The CFDP pause, resume, and cancel actions may appear to take a long time to work depending on the state of the CFDP engine at the time of the request.
7. The current CFDP configuration default values work well for local area network transfers of files when using Native CFDP. However, if you perform file transfers in a non-DTN delay environment, you may need to change the values to always have successful file transfer. In those instances you will get a message about file transfers failing because of Ack/Nak limits being reached or inactivity timeout. It is suggested that you use the auto suspend and resume capability. This will limit help make the transfers more efficient by detected loss of signal (LOS) conditions. See the CFDP document for details.
8. After loading a new version of TReK, you should delete help cache directory (gov.nasa.msfc.trek). The location of the directory is operating system dependent:
   Windows: C:\Users\<username>\AppData\Local\gov.nasa.msfc.trek
   Linux: /home/<username>/.local/share/gov.nasa.msfc.trek
9. The Windows examples delivered are for Visual Studio 2010. They can be updated to newer versions of Visual Studio as required. Please make sure that you get the .lib and .dll files that match the version of Visual Studio you are using.
10. Windows only - The TReK IONizer application will have a console window that opens in addition to the graphical user interface. You will also see console windows for bpecho and trek_hpeg_proxy if those applications are started as part of ION startup.
11. ION configuration files generated on a Windows computer and then moved to a Linux computer can have characters that cause problems with Linux scripting. You can fix this problem with a simple command line in the directory where the files are moved. The command line is:

```
sed -i -e 's/\r$//' *
```

If you see a message with "^M" in it, you will have to use the above command line to fix the problem.

12. It is recommended that you use TCP as the convergence layer for all ION configurations. Most of the testing with the TReK generated configuration files has been with TCP. If you must use UDP, please be aware that bundle retransmission will not occur in ION if the data is not received even with custody transfer turned on. For this reason, if UDP is needed you should consider using LTP over UDP.
13. When using the EXPRESS library, you should get a tool that provides the Rack Interface Controller (RIC) capability. This can be either hardware/software combinations (RAPTR or Suitcase Simulator) or pure software (Common Suitcase Simulator).

If you discover anything that is not on the list, please contact the TReK Help desk at trek.help@nasa.gov.

Release History

The following is a summary of the changes associated with each TReK release. Details on new capabilities and changes are available in the documentation for the appropriate item.

- Version 4.4.0:
  - Notes:
    - See bug fixes.
    - This version is compatible with EHS 19.x – 22.x.
    - See Known Issues for important note about DTN.
  - New Processes or Libraries:
    - CFDP Service (Windows only)
  - Updated Processes or Libraries (includes change requests):
    - Added drop box capability to CFDP Software (Console, GUI, Library, and Service)
  - Bug Fixes:
    - The IONizer application will no longer erroneously report a missing process when running without a proxy. You must regenerate your configuration files to eliminate the issue. Also, missing processes are only reported once instead of every second.
- Version 4.3.0:
  - Notes:
    - See bug fixes.
    - This version compatible with EHS 19.x, 20.x, and 21.x
  - New Processes or Libraries:
    - HPEG API
    - GSE Convert GUI
  - Updated Processes or Libraries (includes change requests):

        - Added a new data type for EHS Converted Time to the Data API to support GSE Packets.
        - Parameter::GetValueAsString() will now return enumerations strings when available.
    - Bug Fixes:
        - Corrected memory leak in the CFDP Native library.
        - Packet::Extract() will no longer return an error if a zone is composed of a single variable length parameter and the length of the parameter is zero.
        - Enumerator::Get() will now return the minimum required buffer size if TREK_DATA_NOT_ENOUGH_SPACE is the return value.
- Version 4.2.1:
    - Notes:
        - See bug fixes.
        - All bug fixes are associated with HPEG and are not required for flight configurations.
        - This version compatible with EHS 19.0 and 20.0.
    - New Processes or Libraries:
        - None (bug fixes only)
    - Updated Processes or Libraries (includes change requests):
        - None (bug fixes only)
    - Bug Fixes:
        - HPEG application now queries POIC for user authentication timeout and informs user that re-authentication is required.
        - Linux issue with multiple user accounts and HPEG resolved.
        - HPEG now activates if POIC configuration does not match user account capabilities.
        - IONizer works on slow computers.
- Version 4.2.0:
    - Notes:
        - Added EXPRESS library.
        - This version compatible with EHS 19.0 and 20.0.
    - New Processes or Libraries:
        - EXPRESS Library
    - Updated Processes or Libraries (includes change requests):
        - None
    - Bug Fixes:
        - Bugs found during beta testing.
- Version 4.1.0:
    - Notes:
        - Added Delay Tolerant Networking (DTN) Capability.

        - Updated HPEG interface with POIC. This version compatible with EHS 19.0 and 20.0.
        - Added TCP keep alive support.
        - Add support for spaces in filenames or path for CFDP file transfer functions.
    - New Processes or Libraries:
        - IONconfig Application
        - IONizer Application
        - IONizer Library
    - Updated Processes or Libraries (includes change requests):
        - CFDP Application
        - CFDP Console Application
        - CFDP Library
        - Device Services Library
        - HPEG Application
    - Bug Fixes:
        - Minor fixes for off-nominal conditions in CFDP library.
        - Minor fixes for return codes in Device Services library.
        - Bugs found during beta testing.
- Version 4.0.0:
    - Notes:
        - Initial capabilities
    - New Processes or Libraries:
        - CFDP Application
        - CFDP Console Application
        - CFDP Library
        - Data Library
        - Device Services Library
        - ERIS Simulator Console Application
        - HPEG Application
        - TReK Assistant Application
        - User Calibrator Generator Console Application
    - Updated Processes or Libraries (includes change requests):
        - None (initial release)
    - Bug Fixes:
        - Bugs found during beta testing.